

RECEIVED

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

MAY - 5 1994

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Amendment of the Commission's) CC Docket No. 92-166
Rules to Establish Rules and)
Policies Pertaining to a)
Mobile Satellite Service)
in the 1610-1626.5/2483.5-2500 MHz)
Frequency Bands)

COMMENTS OF HARRIS CORPORATION

Harris Corporation ("Harris") hereby submits its comments with respect to the Notice of Proposed Rulemaking (the "Notice") in the above-captioned proceeding in which the Commission proposes rules and policies governing the Mobile Satellite Service Above 1 GHz.^{1/}

I.
OVERVIEW OF COMPANY AND
INTEREST IN THIS PROCEEDING

Harris, a Fortune 200 company, produces high technology communication and information processing systems for commercial and government customers in over 150 countries. The company's business is focused on four major areas -- electronic systems, semiconductors, communications and office systems. With more than 28,000 employees worldwide, the company's annual sales

^{1/} Notice of Proposed Rulemaking, CC Docket No. 92-166, FCC 94-11, released February 18, 1994.

045

exceeded \$3 billion in 1993. Headquartered in Melbourne, Florida, Harris is the largest electronics company in the southeastern United States.

In January 1994, Harris announced the company's commitment, as a strategic partner, to design, develop and manufacture the satellite communications payload for the ELLIPSO™ satellite system. Harris has committed, as an investor and technology partner in the ELLIPSO™ program, to provide the associated engineering and management support to Ellipsat Corporation and its parent company, Mobile Communications Holdings, Inc. Harris is working closely with Fairchild Space, Westinghouse Electric Corporation and others on the ELLIPSO™ team to ensure rapid implementation of the proposed global satellite system.

The ELLIPSO™ program will be executed within the Aerospace Systems Division of Harris' Electronics Systems Sector. The Aerospace Systems Division specializes in airborne and spaceborne systems for processing, displaying and communicating information. The Aerospace Systems Division has annual sales of approximately \$250 million and is a leading producer of communications equipment and systems for the U.S. government and industry.

The company's Aerospace Systems Division has extensive experience in the design, development and manufacture of space communications systems that is directly relevant to the ELLIPSO™

project. This experience includes the following programs:

- *NASA Tracking and Data Relay Satellite System (TDRSS):
Antennas and Communications Subsystem.*
- *Landsat 7 System: Communications Data Link.*
- *Air Force Brilliant Eyes Program:
Communications Payload.*
- *NASA Space Station Program: Audio/Video
Distribution System.*
- *Space Shuttle: Communications Systems.*

To highlight other examples of Harris' relevant expertise in electronic systems and communications, the company is a major supplier of information systems and application software for federal, state and local governments, a contractor for the nationwide upgrade of communication systems in the FAA regional air traffic control centers, a market leader in aerospace systems, and a leading supplier of turnkey communication systems worldwide.

As a strategic partner of ELLIPSO™, Harris has a strong interest in the subject proceeding and believes that the company can provide a useful perspective in the rulemaking process given the breadth and depth of its communications and aerospace expertise. Although Harris is not an applicant, the company has a major stake in the outcome of this proceeding. The company has

made a substantial commitment to the ELLIPSO™ system and is looking to commercial space, particularly mobile communications, as a significant future growth area for the company. It is important for the Commission, in this proceeding, to adopt rules and policies in an expeditious manner that will allow all of the LEO systems to move forward and implement their particular market and technical visions.

II.
REASONS WHY HARRIS CHOSE TO
SUPPORT THE ELLIPSO™ SYSTEM

In the context of this proceeding, it is illustrative to share the reasons why Harris elected to support the ELLIPSO™ program as a strategic partner. Harris reached its decision to support ELLIPSO™ after a thorough and extensive review of all of the planned Big LEO systems. This decision was based on Harris' conclusion that ELLIPSO™'s technical and market approach offers distinct advantages over those of the other proposed LEO systems.

The primary advantages of the ELLIPSO™ system from Harris' perspective can be summarized as follows.

First, ELLIPSO™'s unique combination of medium altitude (7800 nmi), highly elliptical and equatorial orbits provides two system benefits: (a) lower system cost due to the fact that fewer satellites are required to provide global coverage;^{2/} and (b)

^{2/} Global coverage may, in fact, be possible with only fourteen satellites due to the unique characteristics of ELLIPSO™'s elliptical orbits.

system capacity that can be tailored to both time of day and latitude, placing peak capacity at the time and place needed.

Second, ELLIPSO™ interfaces with and utilizes the existing public switched telephone networks around the globe, thereby lowering system costs and enhancing the likelihood of obtaining the requisite licenses in foreign countries.

Third, through ELLIPSO™'s progressive deployment of satellites, made possible by the system's unique technical design, it has the valuable ability to offer marketable capacity immediately after the first launch. This provides earlier revenues and an opportunity to tailor future satellites to meet demand in a market that is, as yet, untested.

Fourth, the cost of the ELLIPSO™ system is sufficiently low to permit subscriber costs to be competitive with cellular rates.

These technical and market features of the ELLIPSO™ system will, in Harris' view, provide the company with a unique and valuable approach that is well-designed to meet the marketplace challenges of a new and commercially unproven global satellite service.

III.
EXPEDITIOUS AND EQUITABLE
COMMISSION ACTION IS IMPORTANT

Given its commitment to the ELLIPSO™ system, Harris has a strong interest in the expeditious adoption of rules and policies that permit all of the Big LEO systems to move forward and

compete in the marketplace. In this regard, Harris supports the Commission's proposed spectrum sharing plan as an equitable approach that ensures sufficient spectrum for each system to begin initial operation. This certainty is critical for companies, like Harris, that are making business decisions involving the Big LEOs.^{3/}

The Big LEOs offer the potential for U.S. global leadership in satellite technology and services. The market for global LEO services alone is estimated to exceed \$20 billion. Regulatory delay, in adopting LEO MSS rules and licensing of the U.S. LEO systems, could preclude or impede market entry by U.S. companies, thereby eroding the technological advantage that U.S. companies now have in this arena.

In addition, for U.S. aerospace companies, like Harris, the Big LEOs represent an important opportunity to diversify in a post-Cold War economy. Today, approximately eighty percent (80%) of sales by Harris' Aerospace Systems Division is to government customers. The Division's goal is to increase commercial sales to approximately fifty percent (50%) of the total, as part of the company's efforts to diversify from a defense-based portfolio to a broader-based one. The Big LEOs hold the promise of future employment for white-collar technology workers; Harris estimates

^{3/} Harris strongly opposes the use of auctions, lotteries or comparative hearings because of the associated delay, expense and uncertainty that would result and could ultimately preclude the benefits of the Big LEO service.

that the ELLIPSO™ program will mean 150-200 jobs that might otherwise be threatened by defense cuts.

In short, the Big LEOs are important for U.S. global leadership in technology and services, and for defense conversion in a time of declining government spending. To achieve these important public interest objectives, it is critical for the Commission to move forward expeditiously with licensing of the Big LEO Systems. Equally important, the Commission must adopt a spectrum sharing plan and regulatory framework that accommodates all of the Big LEO systems and provides flexibility for diverse systems to implement their business plans. ^{4/}

^{4/} For this reason, any qualification standards adopted by the Commission should not mandate (or penalize) a specific technical or market approach. It is important that the Commission provide flexibility for the LEO systems to implement individual market strategies without unnecessary government intrusion. As discussed above, ELLIPSO™'s unique market/technical approach was a primary reason for Harris' decision to join the ELLIPSO™ team as a strategic partner and to commit substantial resources to the project.

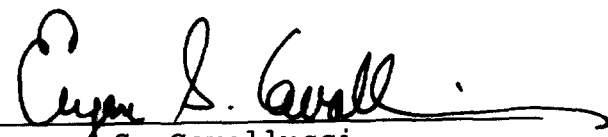
CONCLUSION

For the reasons set forth herein, Harris urges the commission to move forward expeditiously with adoption of rules for MSS Above 1 GHz and to provide system operators sufficient flexibility to implement their market and technical visions.

Respectfully submitted,

HARRIS CORPORATION

By:


Eugene S. Cavallucci
Vice President - Counsel
Harris Electronic Systems Sector

Andrew S. Hament
Senior Counsel
Aerospace Systems Division

HARRIS CORPORATION
Aerospace Systems Division
P. O. Box 94000
Melbourne, FL 32902-9400
(407) 727-4127

May 5, 1994